UN-MANNED SATELLITES ON POSTAGE STAMPS: THE ITOS/NOAA SERIES

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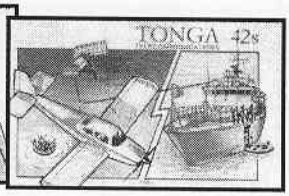
This is the third in a series of articles about un-manned satellites on postage stamps. This article features the Improved TIROS Operational System (ITOS) / National Oceanic and Atmospheric Administration (NOAA) series of weather satellites. NOAA satellites are named for the Department of Commerce agency responsible for procurement and operation of weather satellites. These satellites follow the TIROS and ESSA satellites covered in the first article. The first satellite, TIROS-M, was launched on 23 January 1970, followed by NOAA-1. The ITOS sub-series continued thru NOAA-5 launched on 29 July 1976. Then a change in satellite procurement and design resulted in the next-generation TIROS-N launched on 13 October 1978, followed by NOAA-6. This sub-series continued thru NOAA-7 launched on 23 June 1981 and then with Advanced TIROS-N (ATN) satellites, the first being NOAA-8 launched 28 March 1983. This series continues thru the most recent NOAA-16 launched on 21 September 2000.

Three satellites in this series never attained successful orbits and so did not become operational: ITOS-B, ITOS-E1, and NOAA-B. A fourth satellite, ITOS-C/E2, was not needed and was never launched, due to the longevity of the satellites in orbit. The complete satellite series with launch dates is given on the website developed by the authors for the satellites featured in these articles. Look for the ITOS/NOAA series under the polar-orbiting-weather category, which can be found along with other categories at: http://www.cira.colo state .edu/ramm /hillger/satellites.htm

NOAA satellites are placed in near-polar sun-synchronous orbits between 800 and 1400 km altitude. Two satellites are operational at any time. Each satellite views all portions of the Earth below at a fixed local time, one in the morning and the other in the evening. Data and measurements are available every twelve hours from each satellite,

reduced to every six hours for a two-satellite system.

A table of all postal items known to show the NOAA series accompanies this article. The table is also available on the website mentioned above. Images of several postal items showing ITOS and NOAA satellites are presented with this article. ITOS have three slightly-curved solar panels attached to a square body, looking somewhat like a cardboard box with three flaps standing open. TIROS-N and ATN satellites have one large rectangular solar panel attached via an arm to a long body with instruments on the side facing the Earth. The TIROS-N sub-series has three circular louvered radiant coolers on each side of the body. The ATN sub-series has a longer body and four radiant coolers that are somewhat hidden behind additional instrumentation attached to the body of the spacecraft.



One of the stamps in the table, Netherlands B652, is different from the others, in that it does not show a NOAA satellite. Rather it shows an image identified as being from NOAA-11. Satellite images have been shown on other stamps, but it is not often that they are connected to a specific satellite.

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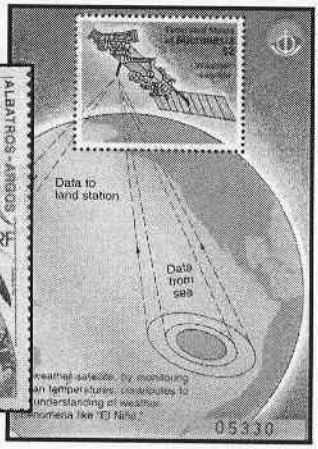

CHECKLIST OF POSTAL ITEMS SHOWING NOAA SATELLITES

Country	Cat. No.*	Item Type**	Year	Notes on Content***
Barbados	516		1979	ITOS/NOAA
China (Taiwan)	2221		1981	TIROS-N/NOAA
French Southern and Antarctic Territory	C50		1979	TIROS-N/NOAA
French Southern and Antarctic Territory	C114		1991	TIROS-N/NOAA
French Southern and Antarctic Territory	C147		1998	TIROS-N/NOAA
Indonesia	1882		2000	ATN/NOAA
Malagasy Republic	969	S/S of 1	1990	ATN/NOAA
Micronesia	298	S/S of 1	1998	ATN/NOAA
Netherlands	B652		1990	ATN/NOAA-11 image
Russia	5603	Margin S/S-1	1987	ATN/NOAA
Tonga	785b	From strip of 3 (785a-c)	1991	TIROS/N/NOAA
Tonga	785c	From strip of 3 (785a-c)	1991	TIROS-N/NOAA
Viet Nam	447		1973	ITOS/NOAA
Viet Nam	497	Overprint on 447	1974	ITOS/NOAA

*Scott number, unless indicated with Mi or BL for Michel
**S/S# = souvenir sheet, where # = number of stamps in sheet
***ITOS/NOAA includes ITOS-1 (TIROS-M) and NOAA-1 thru NOAA-5; TIROS-N/NOAA includes TIROS-N, NOAA-6 thru NOAA-7, and NOAA-12; ATN/NOAA includes NOAA-8 thru NOAA-16

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